The Next Generation of Petroleum Geoscientists

Royal Holloway, University of London (RHUL) recently celebrated 30 years of their M.Sc course in Petroleum Geoscience. In light of this milestone, we asked RHUL's Dr Jürgen Adam, Professor Pete Burgess, Professor Bernie Vining and Dr Nicola Scarselli to look back over the past 30 years and forward to what the future may hold.

What key elements give a successful teaching programme global appeal?

We believe that three key elements define a successful petroleum-related teaching programme. Firstly, expose students to rocks. You cannot provide world-class geology training without field trips to excellent outcrops where elementary concepts of petroleum geology can be directly observed and understood. The second element is a strong link between teaching and research, where research is the main driving factor that inspires the lectures. The third key element is to position our students at the forefront of technology in hydrocarbon exploration.

These elements are at the core of our RHUL master programme, which is globally renowned for regional basin analysis. Students enjoy multiple field trips during their curriculum, including to the Pyrenees where spectacular outcrops demonstrate tectonic and sedimentary processes at a basinal scale, and also Dorset, where they work in teams to generate a prospect, investigating the play elements and geological timing, performing volumetric estimates, uncertainty and risk analyses and addressing the commercial considerations.

As for research, our highly acclaimed research consortia like the Fault Dynamics Research Group and the Compass and SE Asia Research Group have for over 20 years produced high quality studies on regional tectonic, structural geology and basin analysis.

What part does the petroleum industry play in your training programmes?

We have an Industry Advisory Board of 24 companies from across the spectrum, including super-majors, independents, service companies and consultancies, which gives guidance as to what the industry is looking for both in teaching and research. To ensure our students learn industry-standard practices and skills, industry experts contribute with lectures and short courses on a range of subjects, including subsurface evaluation, basin modelling, petroleum systems and economics.

During this downturn, what advice would you give students contemplating a career in petroleum geoscience?

Keep optimistic! Remember, downturns are followed by upturns; it's all in the timing. Meanwhile, we advise our students to look at ways in which they can distinguish themselves from others. For example, in addition to their excellent academic record, in what other interests have they excelled? Demonstrate the key talents and qualities the industry looks for: leadership, initiative, motivation, team-working, integrity, professionalism, enthusiasm.

How do you see petroleum geoscience training changing in the next 30 years?

That's a question we continually ask ourselves. To quote Winston Churchill: "The farther backward you can look, the farther forward you are likely to see"! As part of our 30-year celebrations we held a symposium, with presentations from alumni and staff from over the decades. It was really interesting to find that many of the founding principles of the course are still very important today, including the annual symposium where students make presentations, reinforcing the need for good communication skills; the brand of regional basin analysis; group projects using industry datasets; even visiting the same field areas!

This is a constantly evolving industry, and the teaching programme needs to maintain flexibility, recognising that change takes time and that a strong link to our research programmes is essential. We want to equip future geoscientists with a broad and yet fundamental set of core skills such as structural geology, sedimentology and geophysical analysis, which will always be relevant as the industry develops.

What future trends are in your crystal ball?

Keeping a finger on the pulse of future industry trends is very important, so we rely on the insights and advice of the Industry Advisory Board. There are two certainties: firstly, petroleum geoscience will continue to have huge societal impact over the next 30 years as petroleum products will remain important facets of everyday life. Secondly, change will be continuous and frequent; the challenge is to successfully manage it.

What other trends do we see? The need for capability-building in many parts of the world is on the increase. Distance learning will play an important role. A strong tie to research, embracing an integrated, multi-disciplinary approach, in a global context, will continue to underpin teaching. In the end, though, it's a people thing: students and teachers, with passion and enthusiasm, producing high quality science in an environment that nurtures creativity – as evidenced last year, when RHUL won the AAPG Imperial Barrel Award! ■

Founders Building, Royal Holloway campus.